MINING ENGINEERING, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

Program Description

The minor in Mining Engineering offers a specialized program for students in many other broad-based, technical majors, such as those in engineering or science. The demand for professionals with the training and skills for a career in the minerals- and energy-recovery profession far exceeds the supply. Mineral exploration and evaluation, mine development, marketing, health and safety, environmental protection, and mine management are all areas of industry employment. It is recommended that students wishing to pursue this minor come from an engineering or science major. As a result, the selection of this minor can provide additional career options for students in a wide range of offerings at Penn State.

What is Mining Engineering?

Mining today means computer design and automation, surveying and monitoring with drones, developing and refining our resources for critical metals and fuels, improving health and safety, and promoting sustainability principles. The supply chain for transportation, manufacturing, agriculture, healthcare, energy, and defense relies on mining. Mining engineers touch all aspects of resource recovery from mine planning through production through refining to final reclamation of mined lands. They are found in mines, processing plants, engineering consulting companies, and corporate board rooms. Their job may see them in the field one day and engrossed in plans and designs in an office the next. They put all their engineering skills to use.

You Might Like This Program If...

- You want to join a high-tech industry that provides metals, fuels and materials for every industry.
- · You want to face new opportunities and challenges every day.
- You want to be a problem solver.

Program Requirements

Requirement	Credite
Requirements for the Minor	20

Requirements for the Minor

A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (https://senate.psu.edu/students/policiesand-rules-for-undergraduate-students/59-00-minors-and-certificates/). In addition, at least six credits of the minor must be unique from the prescribed courses required by a student's major(s).

Code	Title	Credits		
Prescribed Courses				
Prescribed Courses: Require a grade of C or better				
MNG 230	Introduction to Mining Engineering	3		
MNG 331	Rock Mechanics	3		
MNG 404	Mine Materials Handling Systems	2		
MNG 410	Underground Mining	3		

MNG 412	Mineral Property Evaluation	3
MNG 422	Mine Ventilation and Air Conditioning	3
MNG 441	Surface Mining Systems and Design	3

Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (https://senate.psu.edu/ students/policies-and-rules-for-undergraduate-students/32-00-advisingpolicy/)

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Career Paths

Graduates will be prepared to work domestically or internationally to develop or operate mines or to work in supporting activities like engineering consulting, equipment development and supply, banking, regulatory enforcement, or research.

Careers

Companies that actively mine are the largest employer, and seek graduates for production, engineering, and management-trainee positions. Manufacturers of mining equipment employ design and application engineers from our program, as do consulting engineering firms. Government agencies focused on safety, the environment, and research employ many mining engineers. Some are employed in rather unexpected places including banks that finance mining projects and the military. Internships are an important part of the undergraduate program experience, and many of our students complete two or three summer internships with mining companies.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE MINING ENGINEERING PROGRAM (https:// www.eme.psu.edu/recruiting-careers/)

Opportunities for Graduate Studies

A relatively small number of mining engineering graduates pursue graduate education; but doing so adds additional career opportunities at government and private research labs, and in academia. Often underappreciated, however, is that broadening and deepening the level of technical skills is valuable in the engineering and production career paths in addition to the obvious value for a career in research. In this regard, developing specialties in a particular facet of mining engineering or expanding into interdisciplinary areas can be particularly rewarding. Some mining engineering graduates pursue graduate degrees in law or business administration.

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (https://www.eme.psu.edu/graduate/)

Professional Resources

- Mining Society Student Chapter (https://www.eme.psu.edu/ undergraduate/undergraduate-resources/student-organizations/)
- International Society of Explosives Engineers Student Chapter (https://www.eme.psu.edu/undergraduate/undergraduate-resources/ student-organizations/)
- The Society for Mining, Metallurgy & Exploration (https:// www.smenet.org/)
- National Mining Association (https://nma.org/)
- The American Institute of Mining, Metallurgical and Petroleum Engineers (https://aimehq.org/)
- International Society of Explosives Engineers (https://isee.org/)
- The National Stone, Sand and Gravel Association (https:// www.nssga.org/)

Contact

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